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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Klaus Winter

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EXAMINER

PIERRE LOUIS, ANDRE

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/980,146	Applicant(s) WINTER ET AL.	
	Examiner ANDRE PIERRE LOUIS	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-15 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 4/11/2008 has been received and fully considered.
2. Claims 1-5 remain cancelled; claims 9 and 10 remain withdrawn from consideration.
3. Claims 12-15 are added; and claims 6-8, and 11-15 are presented for examination.

Response to Arguments

4. Applicant's arguments filed 4/11/2008 have been fully considered but they are not persuasive.

4.1 Applicant argues that the combination of Nier et al. and Winner et al. does not teach the step of carrying, correlating and outputting of the claims; the Examiner respectfully notes that while Applicant's states that Nier et al. does not even disclose carrying out lane allocation via frequency distribution of lateral displacement, it respectfully notes that the office action makes clear that the secondary reference Winner et al. was brought to remedy that deficiency (*see Winner fig. and pages 2-3*); and that Winner et al. does also show correlating the frequency distribution with at least one of a stored frequency and characteristic histograms (*see fig.4, pages 8-9*). With regards to applicants' assertion that Nier et al. does even process signal from lateral displaced, detected radar, the Examiner, again, respectfully note that Winner et al. which was used in the rejection for that purpose does provide processing signal from laterally displaced objects (*see again fig.1, pgs 2-3, and fig.4 pgs. 8-9*). Again, on page 6 of Applicants' remarks, Applicants' reasserts that Nier does not disclose a frequency distribution of lateral displacement, the Examiner realizes that this argument is similar to that of the one previously mentioned and therefore inherits the same response. As per Applicants' argument that Nier does not correlate the frequency distribution and does not disclose stored models for the frequency

distributions of lateral displacements, or characteristic histograms, the Examiner respectfully notes that it is the combination of both Nier et al. and Winner et al. that is relied upon in the rejection of the claims; while Nier et al. does not specifically state that the correlated frequency distribution is of lateral displacement, one of ordinary skilled in the art would clearly appreciate the approach taken by Nier et al., as Nier et al. teaches multilane roadways with vehicle equipped with distance sensor transmitter, receiver for spacing and/or tracking lane information of moving vehicles (*see fig.1-2 and elements 11, 12, 13, col.2 lines 46-56 and col.6 lines 36-50*); and stored a model in a table like manner (*also see table 1*). However, Winner et al., used a secondary reference in the rejection, does provides the correlation of a frequency distributions of laterally moving vehicles having ACC to traffic lane via frequencies distribution of lateral displacement (*see fig.1, and pages 2-3*) with at least one stored model for frequency distributions of lateral displacements, and characteristic histograms (*see for example Winner et al. fig.1,4, pages 6-7, 8-10*), and further including outputting a model of frequency distributions (*see fig.3, pgs. 6-7*).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5.0 Claims 6-8, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nier et al. (U.S. Patent No. 4,063,237), in view of Winner et al. (GB 2317256 A).

5.1 With regards to claims 6-8, Nier et al. substantially teaches a method for a motor vehicle having adaptive distance and speed control for lane allocation of consecutive vehicle on a

multi-lane roads (*fig.1-2, title, col.2 lines 46-68*), and particularly teaches the step of: carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacement of detected radar objects (*see 1-2, col.2 lines 46-66, col.5 line 23-col.6 line 41*); means for correlating a determined frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads having a define width and (b) characteristic lateral displacement histograms for different lanes used by succeeding vehicle (*fig.3-4, col.5 line 31-col.6 line 50; also see Winner et al. fig.4, pages 8-9*).); means for outputting a model part having a highest correlation to the determined frequency distribution as a lane hypothesis, the lane hypothesis including a number of lanes and a lane used by one's own vehicle (*fig.3 (38,39), fig.6-7, col.5 line 34 and col.6 lines 36-50; also see Winner fig.3, pgs. 6-7*). Although, Nier et al. does not specifically state that the correlated frequency distribution is of lateral displacement, one of ordinary skilled in the art would clearly appreciate the approach taken by Nier et al., as Nier et al. teaches multilane roadways with vehicle equipped with distance sensor transmitter, receiver for spacing and/or tracking lane information of moving vehicles (*see fig.1-2 and elements 11, 12, 13, col.2 lines 46-56 and col.6 lines 36-50*). Nevertheless, Winner et al. a method for the allocation of vehicle having ACC to traffic lane via frequencies distribution of lateral displacement (*see fig.1, and pages 2-3*), and further including the correlation of a frequency distributions of laterally moving vehicles having ACC to traffic lane via frequencies distribution of lateral displacement (*see fig.1, and pages 2-3*) with at least one stored model for frequency distributions of lateral displacements, and characteristic histograms (*see for example Winner et al. fig.1,4, pages 6-7, 8-10*), and further including outputting a model of frequency distributions (*see fig.3, pgs. 6-7*). Winner et al. and

Winner et al. are analogous art because they are from the same field of endeavor and that the method teaches by Winner et al. is similar to that of Nier et al. Therefore it would have been obvious to one ordinary skilled in the art at the time of the applicant's invention to combine the method of Winner with distance measuring system of Nier et al. because Winner et al. teaches the advantage of determining relative speed between the vehicle in order to detect the oncoming traffic from all signals delivered by the distance sensor (*see page 3*).

5.2 As per claim 11, the combined teachings of Nier et al. and Winner et al. substantially teach a method for determining lane allocation of consecutive vehicles on multi-lane road, the method comprising: determining lateral displacements of radar sensor detected objects relative to a longitudinal vehicle axis, wherein the lane allocation is implemented in a model-based manner via a frequency distribution of the lateral displacements of the radar sensor detected (*see Nier et al. fig.3-4, col.2 lines 46-65, col.5 line 23-col.6 line 41; also see Winner et al. fig.1, and 4, pages 2-3, 6-9*) ; determining a histogram of a frequency distribution of the lateral displacements (*see Winner et al. fig.1 and 3-4, page 2-3, 6,8*); correlating the histogram to store a lane models (*see Winner et al. fig.1,4, pgs. 6-9, also see Nier et al. col.5 line 23-col.6 line 41*); detecting an instantaneously driving lane of the multi-lane roadway based on a lane model having a greatest correlation to a lateral-offset histogram (*see Winner et al. fig. 1 and 3-4, page 6-9, also see Nier et al. fig.1-2, 6-7*).

5.3 As per claims 12 and 14, the combined teachings of Nier et al. and Winner et al. substantially teach that the frequency distribution is correlated with stored models for frequency distribution of lateral displacements, relating to lane allocation for multi lane roads having a defined width (*see Winner et al. fig.1,4, pages 6-7, 8-10*).

5.4 With regards to claims 13 and 15, the combined teachings of Nier et al. and Winner et al. substantially teach that the frequency is correlated with the characteristic lateral displacement histograms for different lanes used by a succeeding vehicle (*see Winner et al. fig.1,4, pages 6-7, 8-10*).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6.1 Wagner (U.S. Patent No. 5,949,365) teaches a multiple beam radar system.

6.2 Matsumoto et al. (U.S. Patent No. 6,138,064) teaches a method for automatically controlling traveling vehicles.

7. Claims 1-5 are canceled, claims 9-10 are withdrawn and claims 12-15 are added.

8. Claims 6-8, and 11-15 are rejected and **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Pierre-Louis whose telephone number is 571-272-8636. The examiner can normally be reached on Mon-Fri, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 7, 2008

APL

/Paul L Rodriguez/

Supervisory Patent Examiner, Art Unit 2123